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OCAMPO, MARIANNE S				
ART UNIT		PAPER NUMBER		
1723				

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,050

Applicant(s)

TICHY, JOSEF W.

Examiner

Marianne S. Ocampo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 – 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. In particular, amended base claim 1 includes the newly added limitation “**at least one drainage channel** disposed between the filter medium arrangement and a surface of the chamber ... wherein filtered fluid drains through the drainage channel to the outlet side”. The “at least one drainage channel” language includes embodiments wherein there is one or more drainage channels in the body of the filter plate. Both the original specification and original drawings lack support or do not provide sufficient evidence to support the interpretation/limitation of **having more than one drainage channel** included in the newly added limitation of “at least one drainage channel”. In fact, there is support for only one drainage channel (indicated as 16b or 116 in the drawings), but not more than one. **All new matter must be canceled.** Claims 2 – 18

are dependent claims of claim 1 and therefore, they also suffer the same defects since they depend therefrom.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 - 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasaki (US 4,066,546).

5. With respect to claim 1, Sasaki discloses a filter plate (11) *having* (the transitional phrase “having” has been considered by the examiner to convey the same open-ended meaning that the conventional transitional phrase “comprising” conveys in this claim) a body for filtering a fluid, the body (14) comprising:

- an inlet side (defined by the outer surface of the filtering element 19);
- a chamber (15) disposed at the inlet side, wherein the chamber is configured to accommodate a filter medium arrangement (16 - 19) that comprises at least one filter medium layer, and wherein at least some of the filter layers (16) are connected to each other by sintering,

soldering or the like, and at least one filter layer (16) is connected to the body by sintering, as in col. 3, lines 16 – 43 (note here that the examiner has also considered that the packing 16 is comprised of a plurality of filter fabric/woven wirecloths which have been integrated or joined together);

- at least one drainage channel (75, 74) disposed between the filter medium arrangement (16 – 19) and a surface of the chamber;

- an outlet side (defined by the outer peripheries of the filter plate 11 outside outlet 74), wherein the inlet side and the outlet side are connected by at least one fluid flow path (defined by the pores or openings of the filter medium arrangement for filtered fluid) across the filter medium arrangement and wherein filtered fluid drains through the (at least one) drainage channel (75, 74) to the outlet side, as in figs. 2 – 3 and cols. 3 – 4.

6. With regards to claim 2, Sasaki has disclosed the limitations of claim 1 above. Sasaki also discloses the filter medium arrangement comprising at least one filter medium layer formed by a filter fabric (i.e. woven wirecloths), as in col. 3, lines 20 – 24.

7. Regarding claim 3, Sasaki has disclosed the limitations of claim 2 above. Sasaki further discloses the filter medium arrangement comprising a laminar structure of a plurality of fabric layers (16, 18, 17) of different fineness, as in col. 3, lines 16 – 32.

8. Concerning claim 4, Sasaki has disclosed the limitations of claim 3 above. Sasaki also discloses the filter plate (11) having an inlet (defined by the outer surface of plate 11 adjacent the topmost filter layer) for the fluid to be filtered and the fineness of the fabric layers of the laminar structure (16 – 18) increasing towards the inlet (in other words, the filter layer with the fine perforations are located on the outermost/topmost layer 18 adjacent the inlet), as in col. 3.

9. With respect to claim 5, Sasaki has disclosed the limitations of claim 3 above. Sasaki further discloses the laminar structure being additionally covered on the inlet side by a coarser fabric layer, in the form of the net (17) layer, as in col. 3.

10. Regarding claim 6, the term “the terminal fabric layer” lacks proper antecedent basis in the claim. Sasaki has disclosed the limitations of claim 3 above. Sasaki also discloses the terminal fabric layer (i.e. outermost or topmost layer which could be 17,18 or an outer fabric/wirecloth layer of the packing 16) being connected to a filter medium contact surface (which is defined by outer flanges which also defines the outlet 74) on the filter plate body (11, 14), as in fig. 3.

11. With regards to claim 7, Sasaki has disclosed the limitations of claim 5 above. Sasaki also discloses the (additional) coarse fabric layer (17) being connected to a filter medium contact surface (which is defined by outer flanges which also defines the outlet 74) on the filter plate body (11, 14), as in fig. 3.

12. Concerning claim 8, Sasaki has disclosed the limitations of claim 3 above. Sasaki further discloses at least one of the fabric layers (16) being made of metal, as in col. 3, lines 20 - 24.

13. With respect to claim 9, Sasaki has disclosed the limitations of claim 1 above. Sasaki also discloses the filter medium arrangement (16 - 19) comprising at least one filter medium layer (16) being made of porous sintered material, as in col. 3, lines 20 - 24.

14. Regarding claim 10, Sasaki has disclosed the limitations of claim 9 above. Sasaki also discloses the at least one filter medium layer (16) being made of sintered metallic material, as in col. 3, lines 20 - 24.

15. With regards to claim 18, Sasaki has disclosed the limitations of claim 1 above. Sasaki discloses a method of using at least one a filter plate (11) comprising the step of incorporating the filter plate (11) into a rotary filter to separate fine solids from suspensions by pressure filtration, as in cols. 1 - 5.

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki.

18. Regarding claim 13, Sasaki has disclosed the limitations of claim 1 above. Sasaki discloses a method of producing a filter plate comprising the step of connecting the filter medium arrangement (packing 16 which comprised of a plurality of woven wirecloths integrated or joined together and including coarse net metal layer 17 as one packing/filter medium assembly) to the filter plate body (14, 11) by soldering or the like, as in col. 3. Although Sasaki does not teach the connection is by sintering, it is considered obvious to one of ordinary skill in the art at the time of the invention to modify the method of connecting the filter medium arrangement to the filter plate, instead of soldering, to another form of heat sealing or mechanical bonding process such as sintering, depending upon the choice of the manufacturer. Soldering would require intense heat requirements to melt the metals which form the fabric/wirecloths of the filter arrangement to be used in the sealing process, however, sintering does not require the high temperature requirements of melting of the metal but just enough heat to cause the metals of the wirecloths to be in a plastic state to be fused to the filter plate body, and therefore, sintering

would be an obvious choice of sealing/connecting the filter medium arrangement to the filter plate body than soldering. The less heat requirement would lead to lesser energy costs of manufacturing compared to soldering.

Furthermore, there is no persuasive evidence found in the applicant's original specification or disclosure that sintering is deemed a critical limitation in the process of connecting the filter medium arrangement, but in fact, the original disclosure has disclosed/admitted that sintering is comparable, if not an equivalent method of sealing/connecting the filter medium arrangement to the filter plate body to that of soldering, gluing or bonding, as in the original claims and in page 5, paragraph 16 and page 6, paragraph 20.

19. Claims 11 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of Pall et al. (US 4,902,420).

20. With respect to claim 11, Sasaki has disclosed the limitations of claim 9 above. Sasaki has also disclosed the filter medium arrangement comprising a laminar structure of a plurality of layers of sintered material (in the form of packing 16 comprised of layers of woven wirecloths integrated/joined together formed of sintered metal), however, Sasaki fails to disclose the layers of sintered material being of different fineness.

21. Pall et al. teach a filter medium arrangement, similar to that of Sasaki, wherein the filter medium arrangement comprises of a laminar structure of a plurality of layers (5, 6, 7) of sintered powdered or fiber metal materials of different fineness, as in cols. 1 – 8.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the material of construction of the filter medium arrangement of Sasaki, by substituting it with the one taught by Pall et al., in order to provide an alternative and more effective filter arrangement which can provide a longer filter life (see col. 8, lines 44 – 55).

22. Concerning claim 12, Sasaki, as modified by Pall et al., has disclosed the limitations of claim 11 above. Sasaki (as in claim 4), has disclosed the fineness of the fabric layers of the laminar structure (16 – 18) increasing towards the inlet (in other words, the filter layer with the fine perforations are located on the outermost/topmost layer 18 adjacent the inlet), as in col. 3. As a result of the combination with Pall et al., the filter layers (16 – 18) would all have become filter layers formed of sintered material. The same motivation applied in claim 11 above, is applied here.

23. Claims 14 - 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of Arterbury et al. (US 5,293,935).

24. Regarding claims 14 - 15, Sasaki has disclosed the limitations of claim 13 above, and also discloses that the filter medium arrangement comprising at least one of a filter fabric layer

and a layer of sintered material, in the form of a sintered metal layer/wirecloths (packing 16), as in col. 3, but fail to disclose the method step of subjecting the filter plate body and/or the filter fabric layer and/or layer of sintered material to a surface treatment prior to connection thereof (claim 14), wherein the surface treatment comprising electropolishing (claim 15).

25. Arterbury et al. teach a method of producing a filter element (i.e. 42, a filter sheet/screen of stainless steel medium wound around a mandrel) which could be formed into a filter plate (circular configuration) comprising a layer of sintered (screen formed of unitary porous body of sintered metal, particularly of stainless steel), similar to that filter plate/medium of Sasaki, wherein the method including subjecting the filter screen/layer of sintered material to a surface treatment such as electropolishing, as in cols. 5 – 7.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the method of producing a filter plate of Sasaki, by adding the step taught by Arterbury et al., in order to provide an improved filter element which has a smoother and brighter surface and increased pore size. This type of filter element (i.e. with a smoother and brighter surface and an increased pore size) decreases the clogging of the filter elements and allows the elements to be easily cleaned and backwashed easily.

26. Claims 1 – 2, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fendya et al. (US 5,679,249).

27. With respect to claim 1, Fendya et al. disclose a filter plate (148) *having* (the transitional phrase “having” has been considered by the examiner to convey the same open-ended meaning that the conventional transitional phrase “comprising” conveys in this claim) a body for filtering a fluid, the body (161) comprising:

- an inlet side (defined by outer peripheries thereof adjacent to the filtering element 162);
- a chamber disposed at the inlet side, wherein the chamber is configured to accommodate a filter medium arrangement (162) that comprises at least one filter medium layer, and wherein at least one filter layer is connected to the body (161) by welding, heat sealing or gluing/bonding methods (i.e. using a solvent or adhesives), as in col. 8, lines 43 – 47 and fig. 2;
- at least one drainage channel (163) disposed between the filter medium arrangement and a surface of the chamber;
- an outlet side (defined by outer ring flanges which define the discharge channel 163), wherein the inlet side and the outlet side are connected by at least one fluid flow path (defined by the pores or openings of the filter medium arrangement for filtered fluid) across the filter medium arrangement and wherein filtered fluid drains through the (at least one) drainage channel (163) to the outlet side, as in fig. 2 and cols. 7 – 8.

Although Fendya et al. fail to disclose explicitly that the connection between the filter medium layers/arrangement to the filter plate body being by sintering, it is considered obvious to one of ordinary skill in the art that heat sealing would include sintering (i.e. sintering is a form of heat-sealing). See Merriam-Webster Dictionary (10th edition, page 1096) for the definition of **sintering** (that is, *forming a coherent mass by heating without melting*). Furthermore, compared

to welding, sintering would be an obvious and better choice for connecting the filter medium layers/arrangement to the filter plate body because, unlike welding, no high temperature would be required to melt the metallic or polymeric material in which the filter medium layers is being made of, but enough (less heat than to melt) heat to cause the material to be fluid/plastic enough to be fused to the plate body. This less heat requirement would lead to lesser energy costs of manufacturing compared to welding or other forms of heat-sealing such as soldering.

28. Concerning claim 2, Fendya et al. have disclosed the limitations of claim 1 above. Fendya et al. also disclose the filter medium arrangement (162) comprising at least one filter medium layer formed by a filter *fabric* (i.e. porous woven/mesh fibrous media), as in figs. 2 – 4 and in col. 8.

29. With regards to claim 13, Fendya et al. have disclosed the limitations of claim 1 above. Fendya et al. disclose a method of producing a filter plate according to claim 1 (see paragraph 24 above) comprising the step of connecting the filter medium arrangement (162) to the filter plate body (161) by heat sealing, welding or by means of a solvent or an adhesive (i.e. gluing and/or bonding), as in col. 8 and in fig. 2.

30. Although Fendya et al. fail to disclose explicitly that the connection between the filter medium layers/arrangement to the filter plate body being by sintering, it is considered obvious to one of ordinary skill in the art that heat sealing would include sintering (i.e. sintering is a form of heat-sealing). See Merriam-Webster Dictionary (10th edition, page 1096) for the

definition of **sintering** (that is, *forming a coherent mass by heating without melting*).

Furthermore, compared to welding, sintering would be an obvious and better choice for connecting the filter medium layers/arrangement to the filter plate body because, unlike welding, no high temperature would be required to melt the metallic or polymeric material in which the filter medium layers is being made of, but enough (less heat than to melt) heat to cause the material to be fluid/plastic enough to be fused to the plate body. This less heat requirement would lead to lesser energy costs of manufacturing compared to welding or other forms of heat-sealing such as soldering.

31. Regarding claim 18, Fendya et al. also disclose a method of using at least one filter plate (148) according to claim 1 (see paragraph 24 above) comprising the step of incorporating said filter plate (148) into a rotary filter (101, 105) for fine filter media (162) to separate fine solids from suspensions by pressure or vacuum filtration or combined vacuum-pressure filtration, as in cols. 1 – 20.

Allowable Subject Matter

32. Claims 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if rewritten to overcome the rejection under 35 U.S.C. 112, first paragraph, set forth in this Office action set forth above.

33. The following is a statement of reasons for the indication of allowable subject matter: As previously indicated in the last office action (see paragraphs 43 – 44 of Office Action mailed to the applicants on 4-10-03), none of the prior art used in the rejections above and those searched, have disclosed or rendered obvious a method of producing a filter plate having all the steps recited in claims 13, 14 and 16 wherein the surface treatment comprises provision of a dirt-repellant surface coating, and a method of producing a filter plate having all the steps recited in claims 13 and 17 further comprising the step of subjecting an inlet side surface of the filter medium arrangement to finish-dressing and/or finish grinding after connection of the filter plate body and the filter medium arrangement.

Response to Arguments and Amendments

34. Applicant's arguments with respect to claims 1 – 15 and 18 have been considered but are moot in view of the new grounds of rejection based on the teachings of newly found prior art, Sasaki (546), and previously applied prior art, Fendya et al. (249) and based on the combination of Sasaki with previously applied prior art, Pall et al. (420) and Arterbury et al. (935).

35. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Conclusion

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-1039. The examiner can normally be reached on Mondays to Fridays from 8:30 A.M. to 4:30 P.M..

37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

38. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

M.S.O.


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